Exploring University Students' Competence on Learning to Live Together Sustainably: An International Survey Research

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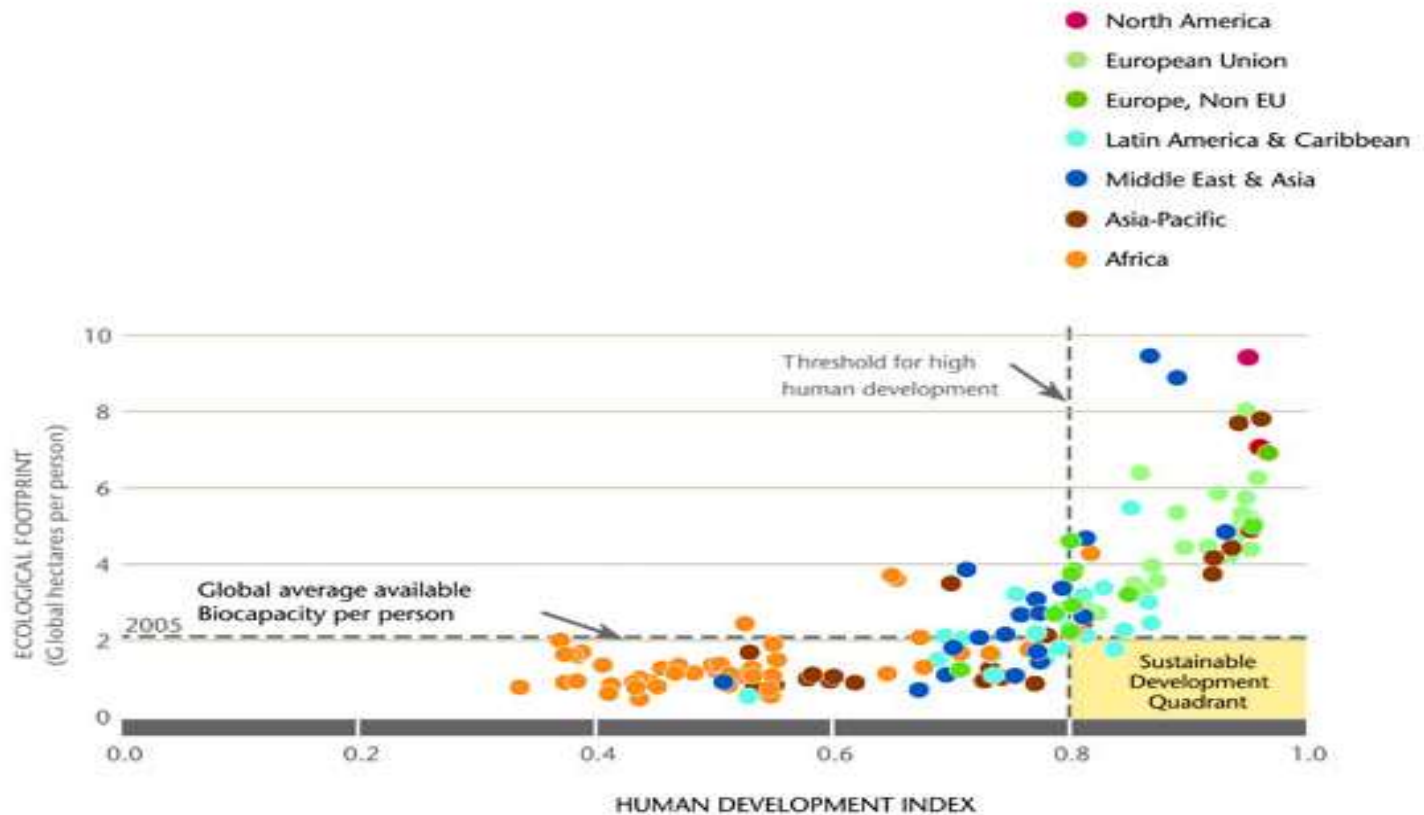## Professor of ICT in Education

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European Commission
TEMPUS

RUCAS

Reorient University
Curricula
to Address Sustainability

Local/Global Sustaibility Challenges

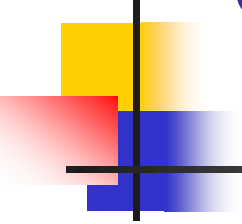Human Development Index and Ecological Footprint

Sustainability crisis

We are increasingly confronted with complex, interconnected social, economic and environmental problems locally and globally. Humanity is living a crisis of sustainability that includes not only environmental issues such as climate change, ozone depletion, biodiversity loss, but also economic and social issues, such as poverty, social inequalities, violation of human rights, gender inequalities, loss of indigenous knowledge, etc.

Summing up, this crisis is largely based on the:

- Unsustainable modes of production and consumption

- Increased proliferation of military expenses and unsustainable use of technology

- Generation of growing gaps of social, economic and political inequality

- Globalization of the market economy driven by greediness of capital accumulation.

The Role of Higher Education: Reflections

- What is my vision of what I would like our world to be?
- Are my actions consistent with the way I would like the world to be?
- What does the way I lead my life mean for the lives of others?
- How can I contribute in creating a more just, peaceful, and ecologically sound world?
- What can we do together as a local community, as a country and as a global community to promote learning to live together sustainably?

What is needed?

There is need for a shift of consciousness that alters: our way of being in the world (learning to be), our way for discovering others by discovering ourselves (learning to live together), our way of learning how to learn as well as appreciating all sorts of knowing (learning to know) and our way of putting knowledge into action (learning to do).

What is this study about?

This study presents an international survey that studied university students' competence on learning to live together sustainably as a constituent of an ESD competence framework aimed to guide the Reorientation of University Curricula to Address Sustainability (RUCAS) - an EU Tempus-funded project. The sample was 3,757 students from 11 universities, 5 were from EU and 6 from Egypt, Lebanon and Jordan.

RUCAS Goals and Approach

The overarching goal of the project is to help partner Higher Education Institutions infuse ESD into their curricula (study programmes) and teaching methodology through capacity building of university staff.

The key question is how to best advance curriculum change towards ESD, given the regional priorities and the need to modernize curricula to address ESD. This cannot be achieved without well-prepared and committed staff to lead curriculum reform and innovation towards ESD.

RUCAS Definition for Sustainable Development

In a recent panel review of 37 experts, sustainable development was *conscious decisions driven by the principles of solidarity, justice, accountability, equity and transparency for the good of present and future generations, locally and globally and to act upon those decisions for advancing social, economic and environmental wellbeing".* consensually defined as "*to making informed, contextual and*

RUCAS Definition of ESD

"Education for sustainability" as *the learning needed to maintain and improve our quality of life and the quality of life of generations to come. It is about equipping individuals, communities, groups, businesses and government to live and act sustainably, as well as giving them an understanding of the environmental, social and economic issues involved.*

Education for Sustainable Development represents a new vision of teaching and learning, a vision that helps people reconnect with nature, by addressing the complexity and interconnectedness of sustainability issues such as poverty, peace and international understanding, sustainable consumption and production, environmental degradation, climate change, water protection and health (UNESCO, 2003; 2005).

Partnership
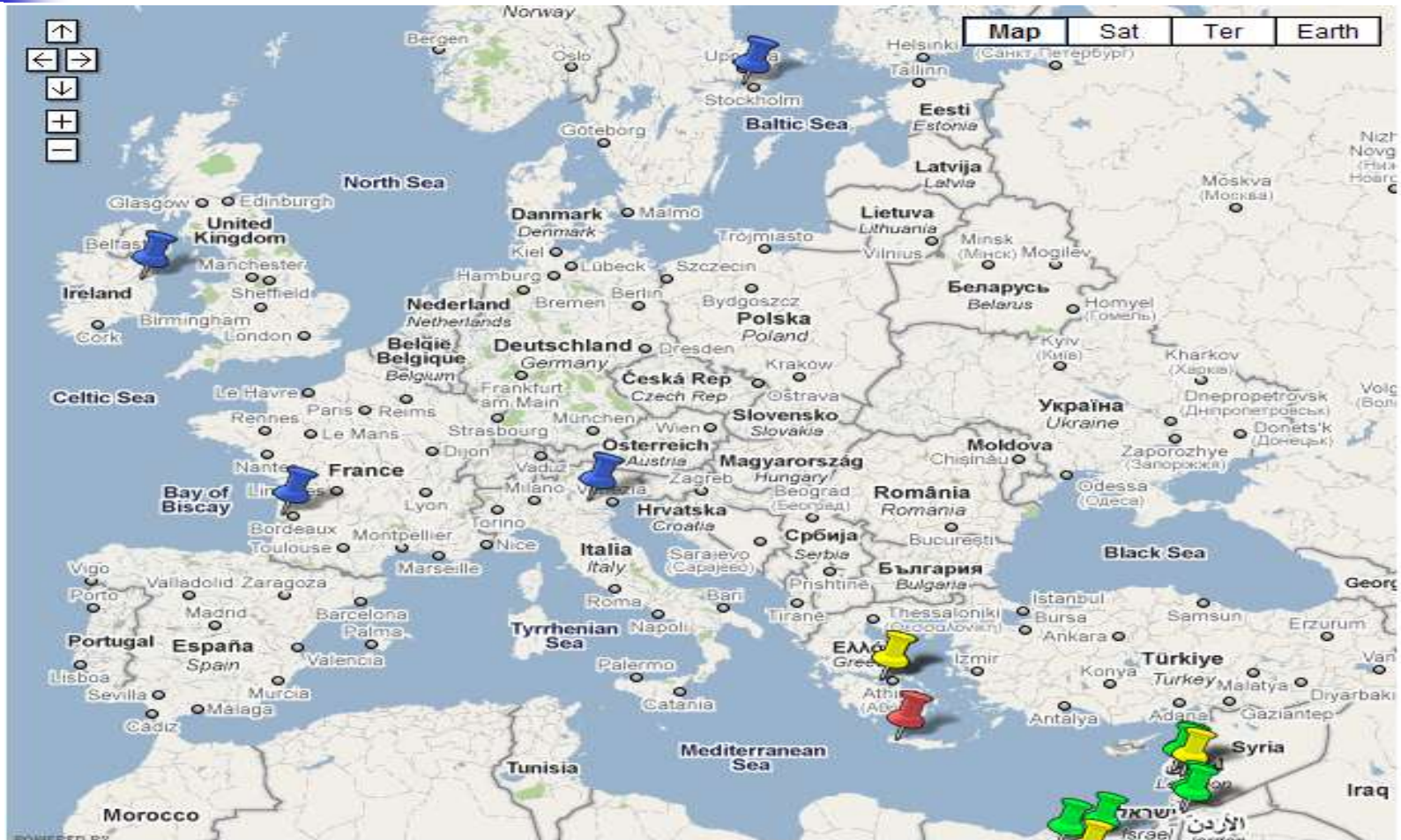
The project specific objectives are to:

- Support the development of ESD in the Higher Education sector in Egypt, Jordan and Lebanon.
- Build capacity amongst university staff to embed ESD in curricula and pedagogy.
- Review and revise undergraduate curricula to address ESD in line with Bologna and Lisbon processes.
- Assist the coordination and dissemination of ESD policy, research, curriculum reform and practice relating to ESD in the partner institutions that are expected to function as role models in the region.
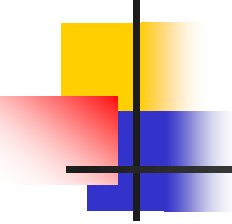
This process entails six key components:

- Develop ESD competences for Higher Education students contextualized to the E.U. and Arab region.
- Evaluate ESD student competences in the participating Higher Education Institutions.
- Establish new models of professional development in ESD.
- Revise education and certification requirements to include ESD and align these revisions to correspond to the ESD student competences and the Bologna process.
- Apply and evaluate the revised education curricula with respect to the ESD student competences.
- Promote reorienting Higher Education towards ESD as a viable avenue for "whole institution" curriculum reform, research and teaching across all

ESD Competence Clusters

Hypotheses, Subjects, Data Collection and Analysis

A structured questionnaire based on the ESD student competence framework was developed, that besides the five clusters of ESD competences, a number of other variables, treated either as independent and/or dependent, were designed to explore students' generic and disciplinary ESD competences. The survey instrument, which was piloted before, was administered in the 11 out of the 12 Universities of the RUCAS consortium.

Subjects and disciplines

- Six academic disciplines, namely: educational sciences, social sciences, applied sciences, business/economics sciences, technical sciences and health sciences.

- "Learning to live together sustainably is expected to be affected by learning to be, learning to do and learning to transform oneself and society.

Frequency of students' responses by participating university

RUCAS Partners	Frequency	Valid %
University of Crete	189	5,0
University of Athens	204	5,4
University of Padova	467	12,4
Dublin City University	47	1,3
University of Bordeaux3	401	10,7
University of Stockholm	127	3,4
Suez Canal University	305	8,1
Hashemite University	754	20,1
University of Jordan	696	18,5
Norte Dame University	339	9,0
University La Sagesse	228	6,1
Total	3757	100,0

Sustainable development curriculum experiences by academic disciplines

Disciplines	SD courses taken		Relevant to SD		SD assignments		No
	NO	YES	NO	YES	NO	YES	
Education	65%	**35%**	38%	**62%**	76%	**24%**	800
Sciences	70	30	48	52	84	16	915
Engineering	83	17	70	30	86	14	423
Health Sci.	86	14	62	38	94	6	325
Soc. Sciences	70	30	55	45	73	27	763
Business/Ec.	54	**46**	34	66	65	**35**	414
Total	70%	**30%**	50%	**50%**	79%	**21%**	3640

Sources of information about sustainable development according to the three first ranks

Sources of information	Rank 1		Rank 2		Rank 3	
	N	%	N	%	n	%
Internet	1975	**53**	626	17	416	11
University courses	672	18	544	15	955	**25**
TV	653	17	745	20	837	22
Newspapers	731	20	829	**22**	809	22
Publications/brochures, etc.	444	12	490	13	794	21
Events (conferences, etc.)	780	21	716	19	780	21
Peers, friends, family, etc.	645	17	723	19	699	19
Special interest groups, etc.	704	19	516	14	589	16
Radio	851	**23**	609	16	542	14

Actions done during the past month for sustainable development reasons

Have you done any of the following actions during the past month for SD reasons?	Yes (%)	No (%)
Switched off unnecessary lights	89	11
Purchased eco-labelled and fair-trade products	35	65
Recycled cans, glass or paper	51	49
Used carpooling	37	73
Purchased environmentally friendly products	40	60
Did any form of voluntary work in your community	31	69
Donated money to charities	32	68
Refused to take a plastic bag from the supermarket	27	63
Used energy saving light bulbs	75	25

Teaching and learning methods- arranged according to the first three ranked

Teaching and learning methods	Rank 1		Rank 2		Rank 3	
	N	%	n	%	N	%
Lecturing	2328	**62**	453	12	535	14
Project-based learning	646	17	1150	**31**	940	25
Interactive engagement	719	19	1059	28	854	23
Case-based instruction	749	20	875	23	909	24
Inquire-based learning	623	16	929	25	817	22
Inter-disciplinary teaching	739	20	886	24	726	19
Problem-based learning	634	17	816	22	838	22
Tech-supported instruction	816	**22**	849	22	689	18
Placed-based learning	756	**15**	603	16	988	**26**
Discovery-learning	598	16	734	20	915	24

Students' attitudes towards learning to live together sustainably

Attitudinal Statements	Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
	(valid %)					
(Mean=3.5; St. deviation=0.80; alpha= 0.66)						
People should be prepared to make sacrifices to improve the quality of life for others	10	7	9	19	**26**	**29**
Everyone should look after themselves rather than rely on the government for help	9	12	16	17	20	25
There is little connection between the protection of the environment and people's quality of life	36	16	9	12	11	16
Economic growth and increased employment are more important than protecting the environment	**27**	**21**	20	13	9	10
There is very little someone like me can do to protect the local environment	34	21	15	12	9	9
What I do in this country has little effect on the quality of life for people in other countries	22	18	17	17	13	13
What other countries do to improve or destroy the environment is none of our business	**58**	**16**	7	6	5	8

Cont…

The third world or less developed countries should deal with their own problems and not look to the world for help	30	15	11	10	11	23
There is very little someone like me can do to protect the global environment	29	18	17	14	10	12
The governments' priority should be to improve the quality of life for people in this country rather than other countries	10	9	15	15	**16**	**35**

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Learning to Live Together Sustainably Competences	Not at all	Poor	Fair	Good	Very Good	Excellent
	Valid (%)					
Learning to Live Together Sustainably (Rate the extend to which you are able to:) (Mean=3.9; St. deviation= 0.88; alpha=0.87)						
become advocates for a sustainable future for all	6	10	23	29	19	13
acknowledge multiple perspectives	3	6	17	28	27	19
develop empathy by putting myself in others' position	2	4	13	23	**28**	**30**
facilitate networking in order to find the relevant knowledge for ESD and to establish partnerships	5	11	23	28	20	13
co-operate and participate in collective decision-making processes	3	8	18	28	26	17
delegate and involve others in meaningful ways, form partnerships and nurture communities of practice	4	10	21	27	23	15
probe into the realities of the worlds in which people live	4	7	18	28	25	18
work cooperatively with other people	2	4	12	25	**30**	**26**
learn to balance between personal and collective needs	3	4	15	26	**33**	**19**
take responsibility for personal and community well-being	5	7	19	26	26	17

Paired samples t-test

Learning to live together sustainably (Mean rate 3.9, st. dev. 0.88) and learning to know (Mean rate 3.9).

On the contrary, statistical significant differences were detected between learning to live sustainably and all other ESD competence clusters.

More specifically, in terms with learning to be (Mean= 4.4, St. dev. 0.80), the mean difference with learning to live sustainably is -0.50, with t (3417) = -34.3, at p< 0.0001. With respect to learning to do (Mean= 4.1, St. dev. 0.85), the mean difference with learning to live sustainably is -0.20, t (3361) = -15.3, p< 0.0001, while for learning to transform oneself and society (Mean= 4.2, St. dev. 0.85), the mean difference with learning to live sustainably is -0.30, t (3313)= -19.9, p< 0.0001. It seems that the hypothesis learning to live together sustainably differs statistically with the other ESD competence clusters, except that of knowledge. However, these differences are located within the medium range of sustainability competence scale, thus, except from statistical points, there is not any practical implication.

RUCAS Community of Practice

RUCAS Network of Sustainable Universities

THANKS A LOT